SOAH DOCKET NO. 582-20-1895

TCEQ DOCKET NO. 2019-1156-IWD

IN THE MATTER OF THE APPLICATION OF THE PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY FOR TPDES PERMIT NO. WQ0005253000	)	BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

ORAL DEPOSITION OF

MARY ANNE WALLACE, PH.D.

Monday, September 14, 2020

(Via Zoom Videoconference)

ORAL DEPOSITION of MARY ANNE WALLACE, PH.D., produced as a witness at the instance of the Intervenors and duly sworn, was taken in the above-styled and numbered cause on Monday, September 14, 2020, from 3:02 p.m. to 5:44 p.m., before Kim Pence, Certified Shorthand Reporter in and for the State of Texas, reported remotely by computerized stenotype machine via Zoom Videoconference from the witness' residence in Hutto, Texas, pursuant to the Texas Rules of Civil Procedure, the latest Emergency Order Regarding the COVID-19 State of Disaster, and the provisions stated on the record or attached hereto.

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DR. WALLACE DEPOSITION EXHIBITS

THE REPORTER: Okay. I will have a short read-in to get us on the record. Today's date is Monday, September 14, 2020. The time is 3:02 p.m. This is the oral deposition of Dr. Mary Anne Wallace, and it's being conducted remotely in accordance with the latest Emergency Order Regarding the COVID-19 State of Disaster.

The witness is located at Hutto, Texas.

My name is Kim Pence, Certified Shorthand Reporter No. 4595. I am administering the oath and reporting the deposition remotely by stenographic means from my residence in Paige, Texas.

Would counsel please state their appearances and locations for the record and who they represent, starting with Mr. Frederick.

MR. FREDERICK: Thank you. Good afternoon. My name is David Frederick. I'm here on behalf of some of the individual Protestants in this case who are represented by my firm. I am in my office in Austin, Texas.

MR. WOTRING: This is Earnest Wotring on behalf of the Port Authority of Corpus Christi. I'm at my office in Houston, Texas.

MS. HUMPHREYS: I'm Kathy Humphreys representing the Executive Director, and with me is

Harrison Malley and Bobby Salehi, and we are in -- our offices are located in Austin, Texas.

MR. WAYNE: And I'm Sheldon Wayne here on behalf of the Office of Public Interest Counsel at TCEQ, and I'm currently in South Padre Island. Our offices are in Austin, Texas.

THE REPORTER: Dr. Wallace, can I get you to raise your right hand?

MR. MOORHEAD: Apologies for interrupting, Kim. I just wanted to announce myself. This is Scott Moorhead on behalf of Audubon Texas. Thank you.

THE REPORTER: Thank you.

THE WITNESS: Excuse me, Kim.

THE REPORTER: Yes, ma'am.

THE WITNESS: Mr. Moorhead's location, please.

MR. MOORHEAD: Sorry. I am calling from here in Austin, Texas from my home office.

THE WITNESS: Thank you.

MR. MOORHEAD: Thank you.

THE REPORTER: The witness has been sworn, so we can start the deposition.

MR. FREDERICK: Certainly. I'll go ahead and do that. Are we ready?

THE REPORTER: Yes, sir.

MARY ANNE WALLACE, PH.D.,
having been first duly sworn, testified as follows:

EXAMINATION

BY MR. FREDERICK:

Q Good afternoon, Dr. Wallace. My name is David Frederick. Your name is very familiar to me. I don't think that we've met before.

Let's see. Let's start out with have you had a deposition taken before?

A I have not. This is my first one.

Q Okay. You will -- I don't know what nonlawyers are told about the kindnesses or otherwise of depositions, but I think you will find this not to be unpleasant.

I could think of -- obviously, I guess, be sure to listen to the question that's asked so that you're confident you're answering the question that actually was asked because that will obviously help us avoid confusion.

Also, to a large extent, you can be in control of the schedule of the deposition. If you decide just for whatever reason that you'd like to take a break, be sure to say something about that and -- and we'll all take a break and get back with this in four or five minutes or ten minutes or something like that.

of looking at the oysters just looking at the oyster spat? Would that be the same answer?

MR. WOTRING: What was the last word, oyster?

MR. FREDERICK: Oh, spat. I'm sorry. Oyster spat.

A Again, you're asking whether or not I reviewed --

Q (BY MR. FREDERICK) Well, I'm -- let me back all the way up. You determined that there would be no violation of TCEQ's Tier I antidegradation standards because of this discharge. Right?

A Correct.

Q And -- and then you also made the same determination for the Tier II antidegradation review. There would be no violation of the Tier II standards. Correct?

A Correct.

Q Now, when you were doing that, did you consider any special sensitivity that might be associated with either oysters or oyster spat?

A I did not, based on my note in the worksheet that there were not oyster beds proximate to the discharge in either the acute or the mixing zone.

Q But since -- I mean, am I not correct that TCEQ

has defined -- I mean, it's written a law that says that the ship channel is oyster habitat, oyster waters?

MR. WOTRING: Objection, form.

Q (BY MR. FREDERICK) It's a legal question, I guess.

A It is. It is. So what you're saying -- if I were asking the question to me, I would say, "Self, are you saying that the standards that are established for the segment do not apply in every single drop of the water in that segment?"

Q I would tell you you were being a little too narrow, but, yes, that question.

MR. WOTRING: Objection, form.

Q (BY MR. FREDERICK) And what would your answer be?

A No, no, because we have to look at the facility where it's discharging, we have to think about those zones, the acute and the mixing zone, and we apply our best professional judgment as to whether in this case the oyster beds would be affected.

Q So am I correct that you would actually have to believe that there were oyster beds within the mixing zone to require special consideration, special protective measures for oysters?

A I definitely would look, you know, a little

beyond the mixing zone. But essentially for my review, I determined that there were not oyster beds proximate to the discharge.

Q And to -- what credence or what weight did you assign to the regulatory decision that we talked about earlier back there in the appendix to 307.10, I think it was, that these are oyster waters? Did that get any deference or weight in your analysis?

A Absolutely. So does exceptional aquatic life use.

Q Well, how did -- what weight did you give to the oyster water designation?

A Well, honestly, I really appreciate that there's oyster waters in Texas. So I -- I paid attention to that designation.

Q But what did you do? When paying attention to that designation, what did it cause you to do differently? How did it --

A It caused --

Q I mean, we agreed that there's no oyster -- at least for the purposes right now we assume there are no oyster beds particularly near the -- well, not only the zone of dilution, but the mixing zone. Right?

A Correct.

MS. HUMPHREYS: Objection, form.

Q (BY MR. FREDERICK) So how did you give consideration to the fact this was oyster waters, but oyster waters that do not have oyster beds near the mixing zone?

A I had to convince myself of that. So I looked at the maps and I used my best professional judgment and I thought about it a lot as to whether or not the discharge would affect oyster waters, and seagrass for that matter, and endangered species.

Q Let me ask you about the -- the test that is to be met at the edge of the mixing zone. So is the test that there is not toxicity for any marine creatures, or is it a -- is it a test that there's not adverse impact? I mean, what's this -- what's the thing that can't happen at the mixing zone -- at the edge of the mixing zone?

A Lethality. And in this case, you would also look at chronic effects because of that designation, so the toxic criteria that's set up or noted in the worksheet, acute and chronic.

Q Okay.

A So acute would be lethality, and then the chronic would be sublethal effects.

Q Now, I would have thought that chronic required some judgment on the reviewer's part about how -- how

much time the marine creature spends in -- well, let's say at the mixing zone, at the edge of the mixing zone. Is that right?

A Correct.

Q So what was your assumption there about how long -- let's take fish larva -- fish larva would be stuck there or be there at the edge of the mixing zone?

A Well, typically this designation on No. 4 on the worksheet --

Q Yes, ma'am --

A -- would benefit the person that's assigning biomonitoring.

Q Well, but for doing the antidegradation review, even the Tier I review, don't you have to conclude that there's no chronic negative thing that happened -- no, there's no chronic impacts at the edge of the mixing zone?

A At the edge of the mixing zone?

Q Yeah.

A I suppose I don't think I really thought of it that way. You know, I didn't -- I didn't in my mind draw that matrix and check that box like that.

Q Well, let me ask about how the -- if you know, how was it determined that the mixing zone would be this 303-foot by 415-foot rectangle?

A Again, from the CORMIX model and the -- and the width and the depth of the channel, the physical characteristics of the receiving waterbody.

Q And is that -- how far vertically does that rectangle extend?

A That I'm not sure of. I can't answer that question off the top of my head. I apologize.

Q Okay. Did you do any examination yourself of like what the -- I want to call it the topography of the ship channel is at that point, but the floor of the ship channel what the -- a longitudinal cross-section of the ship channel there would look like, "there" being the place where the diffuser is?

A I looked at the topo map and our ArcGIS layer.

Q Did the ArcGIS layer give you a profile of the bottom of the ship channel?

A Not -- probably not that specificity. Probably I was going by my knowledge of the area and the fact -- excuse me, and the fact that it's a dredged channel.

Q So if there were I'll call it holes, let's call it -- if there were depressions in the -- in the ship channel, the floor of the ship channel, that is nothing you knew about or would have known about?

A No, sir. And I would have thought -- I think of it as a fairly scoured channel with the ship traffic.

Q And would the -- and just accept hypothetically that there are sinks or low spots at various places in the channel, would that affect the antidegradation review that you undertook at all?

A It might if the diffuser was located in one of them perhaps. But, again, that essentially is a study one would need to do that's outside the confines of the application in reviewing the application.

Q Well, but don't you have to decide that the discharge is not going to degrade -- well, is not going to interfere with existing uses or, in fact, degrade water quality beyond a de minimis degree? And so would the impact of the discharge be different if the bottom of the channel is scored -- scoured, excuse me, on one hand, or is -- has got these depressions in it on the other hand?

A Honestly, I don't know. I would have to set up a study, Mr. Frederick.

Q Okay.

A I honestly would set up a study with this particular diffuser in its particular location in relation to this particular depression we're discussing. And then I'd have to decide -- we'd have to decide collectively as a group what is the impairment we're studying? What's the impairment we're looking for based

on this depression? Were we looking at low DO? What's our question? What are we trying to determine?

Q Well, we're trying to determine whether both -- aren't we trying to determine whether both the Tier I and the Tier II analyses gives an answer that is, you know, no harm, no impact?

A It's a tough question. It's hard to do antidegradation on a new facility because it's kind of like trying to look into a gazing ball and predict the future.

Q Let me ask you as long as we're on the antidegradation question. Have you ever -- are you aware of an instance where it was necessary to do a -- to bring forward the economic justification for a discharge that would violate the Tier II antidegradation standard?

A I'm not aware of any, no.

Q Have you ever heard anybody around TCEQ talk about one?

A No, sir.

Q How about -- what definition do you use for something having no more than -- no more than a de minimis extent of degradation? So let me back up, bad question. Strike that question.

Am I correct that the Tier II

antidegradation provision defines "degradation"? And if you know -- do you know the definition from the regulations on what "degradation" is?

A Well, like you're alluding to, it's de minimis.

Q So then how do you know -- what does "de minimis" mean? What's the standard that's used to figure out if something is more or less de minimis?

A Essentially, you know, you need to -- you need to have that baseline. You need to know what your baseline is and what exactly you're looking for in the antidegradation.

Q Well, let's say you had a baseline. Let's say -- well, so we had a baseline. I'm thinking of like salinity, we had a baseline.

A Uh-huh.

Q Then how would you know whether salinity had changed enough because of the discharge that --

A Uh-huh.

Q -- that there had been more than a de minimis degradation, more than a de minimis extent of change?

A How would I know?

Q Yes.

A In the -- in the little time that I have to review these applications or --

Q Well --

A -- or am I -- am I now omniscient and can see into the future and I can determine what the salinity gradients are going to be over time as -- as this omniscient viewer of this discharge in this channel? You know, what are my confines here? Because, quite honestly, we're not given much time to do these reviews. And, again, I will state for the record they are very difficult to do on new facilities, it's very difficult to assign an antidegradation statement.

Q So, again, I don't -- I don't want -- I think none of us would hold you to an impossible standard. So please don't think that I think that's, you know, the situation. But --

A Well, let me just say for the record that I hold myself to an impossible standard, and it makes me uncomfortable doing antidegradation reviews on new facilities. It's tough because I want to be that omniscient person. I want to be that person doing studies or assigning studies through a permitting framework. And it doesn't fit in our rules, it doesn't fit in the NPDES rules on a federal level. You know, they are looking at data, they want data that's already been generated. And sometimes we can ask the Applicant for data of a -- you know, like historical data of another facility that's similar, you know, perhaps would

have a similar discharge.

Q Well, let's -- I want to come back to that.

A Okay.

Q But then you must have some -- or do you not have in your own mind some definition of how much degradation of the local environment can be tolerated and still you be comfortable saying that the water quality had not been lowered more than a de minimis extent?

A Okay. So, once again, I'm going to give you the Ph.D. answer, which is it depends; it depends, Mr. Frederick, where the discharge is located. And if you note in my explanation for No. 5 on the worksheet here -- you might want to blow it up --

Q (Complied)

A -- I go on to state, (as read) The facility discharges near the Lydia Anne Channel, which opens to the Gulf of Mexico; therefore, there should be adequate tidal exchange for the effluent.

So this is where I start thinking big picture. You have tidal exchange, you have wind events, you have ship traffic that's going to help disperse the effluent beyond the mixing zone and -- and, you know, you've got a dynamic system you're working in. So there you can tie your thought processes back to the things I

was talking about earlier where I was talking about temporal effects. So, in other words, if your -- if your hypersaline water is contained in a cylinder and you dump zooplankton in there and you dump larval fish and you dump larval crab, sure, they're going to be affected. But then you blow it out to the environment that it's in and you're in a dynamic environment, you're not up in a cove somewhere, you know, way up by a more stagnant portion of the Corpus Christi Channel, you're in a physically dynamic environment, and that's going to help you feel -- which to me de minimis -- sometimes you can have hard data and actually run some spreadsheet numbers or models and -- and really look at it from an empirical point of view. But for the most part, an antideg review on a new facility is a feeling, and my feeling with its location in this dynamic environment that it was going to be okay, that this amount of hypersaline water being discharged from this facility would not degrade the environment beyond de minimis.

MR. WOTRING: I'm going to have to take a break, a quick break.

MR. FREDERICK: That's fine. Can we take, I'd say, a 20 minute break?

MR. WOTRING: Yeah, that's fine. That's fine. Thank you.

THE REPORTER: Mr. Frederick, this is Kim. We are off the record.

(Recess: 4:35 p.m. to 4:48 p.m.)

MR. WOTRING: I think we're ready.

MR. FREDERICK: I'm ready if everybody else is.

Dr. Wallace, are you okay for us to crank up again?

THE WITNESS: Yes.

MR. FREDERICK: Well, then why don't we go back on the record. I'm going -- we're going to abandon our inquiry into what is more or less than a de minimis extent, I think. Yeah.

Q (BY MR. FREDERICK) Let me ask -- I think you told me that the mixing zone -- the size of the mixing zone, which in this case is a rectangle 303 by 415 feet, was -- you had no input into setting that 303 by 415 dimension. Is that right?

A Correct.

Q Do you know theoretically why -- what would drive us or what would cause us to come up with that dimension?

A It would be based on the dimensions -- the parameters set by the CORMIX model perhaps, assuming that that would help define that mixing zone, and then

Q -- in any attempts to develop --

A I am not. I am not. So historically the two standards teams were joined as one, and there maybe would have been crossover. But, in fact, now our two standards teams are in separate divisions of water quality, and so there's very little crossover.

The only time I really interact with standards folks is when I do assist with some of the water effect ratio studies for site-specific variance for copper related to the biomonitoring in the permits. So I work with our biomonitoring person on that.

MR. WOTRING: Objection, nonresponsive.

Q (BY MR. FREDERICK) Okay. So -- so just to make sure I got an answer I understand, you, yourself, are not participating in any TCEQ efforts to develop numerical criteria for salinity for the water -- for estuaries for water quality standards?

A Correct; I am not.

Q Okay. You mentioned earlier about the decreasing inflows to bays and estuaries. Am I -- I am correct, am I not, that the antidegradation review -- Tier II antidegradation review is supposed to evaluate the degree of degradation from the quality of the waterbody as it stood in November of 1975? Isn't that right?

A I don't think of it that way. I look at -- I do my antideg based on the criteria set for the standard in the -- at the time that those standards are relevant. So in this case, when I did my review, was the 2014 surface water quality standards.

Q So you don't make any effort doing antidegradation reviews to determine whether the waterbody -- what condition the waterbody was in 1975?

MS. HUMPHREYS: Objection, form.

Q (BY MR. FREDERICK) You can still answer, though.

A I did not. And I did pull the data that was requested for production and would be happy to review that data if that would make the parties -- you know, if they are interested in that, the Protestant parties. Or, you know, if they want to do their independent review themselves and then I do a review and we compare notes on that, I'm happy to do that.

Q Well --

MR. WOTRING: Objection, nonresponsive.

Q (BY MR. FREDERICK) -- do you consider the condition of the waterbody in November of 1975 to really be relevant to an antidegradation review?

A It could be. Again, I'm going back to my it depends answer. And I apologize for being vague with

antideg, but there's a lot to be interpreted there, and there's a lot that could be misinterpreted.

Q But you, yourself -- do I understand correctly that you, yourself, do not go back and try to figure out what a waterbody's condition was in '75?

A No, sir, it wouldn't fit into the time frame of doing these reviews, which are very short.

MR. WOTRING: Objection, nonresponsive.

A I would have to say our reviews are very much like taking a snapshot and -- and I can see where, you know, the more experienced I've become at reviewing permits -- permit applications, especially these new ones, you know, you start building more experience around your evaluations and you get better at it over time.

Q (BY MR. FREDERICK) Let me go back to our exhibit that we had that we were working with earlier. I think I can do this.

A Okay. Okay. I'm going to make my screen bigger.

Q So now are you able to see, oh, like exhibit -- so the -- hang on a minute.

Your interoffice memo, does that come up on the screen for you?

A Yes, sir.

Q Okay. Great. So down here towards the bottom of that memo there is a statement about the piping plover. So let's just -- let me walk through the paragraph and make sure I understand what's being said here.

A Uh-huh.

Q I take it that the watershed itself is -- has been defined by somebody the high priority. Is that true?

A Correct.

Q And is the watershed -- the entire water shed for Corpus Christi Bay, or is it for some smaller segment of that watershed?

A It would be a portion of that segment that's in Nueces County as stated there.

Q Okay. And the piping plover is a threatened species. Okay.

But then it says, (as read) However, the facility is not a petroleum facility, and so discharge -- and discharge is not expected to effect the piping plover -- have any effect on the piping plover. Can you just explain this to me? I don't understand --

A Uh-huh.

Q -- why we don't ask a question about the discharge because the discharge is not coming from a

Q Okay. No, I --
A But you had --
Q I thought that there was some sort of like standard for -- but apparently there's not, or I can look at the CORMIX report. And if it's there, I'll see it.
A Yeah, I guess it -- I mean, to me if I were looking for that answer, I would look in the CORMIX report, and there ought to be a diagram. And then the mixing zone, you know, would be calculated based on the -- you know, the diffuser, the depth of the water column, the depth of the diffuser, the amount of the flow coming out. You know, that's going to change your -- your bubble there.
Q Let me ask you one question, one I think really is my last question. Unfortunately, it's about antidegradation again.
A Okay.
Q When you were doing your antidegradation review, did you -- what assumptions did you make about chemicals that would be added to the water that is discharged so that it is -- well, did you make any assumptions or do any investigation to discover what chemicals would be added to the intake water before it came effluent?

A You know, I probably should have thought about that more. I really -- I really was just thinking more about the salinity, the discharge of the hypersaline water and the effects there than -- than thinking about my conceptual layout of the map in my head of, you know, where are the oyster beds, where are the seagrass, where are the endangered species, where is the discharge with the channel with the -- the flow that I talked about, the dynamic mixing. And it really wasn't until the meeting, you know, where they brought up the treatment of the hypersaline -- I mean, the -- like the backfilter wash and such like you.

Q Let me stop you for just a second. Is the meeting you're talking about the one in like December or something down there in Port Aransas, the big public meeting?

A I believe it was in May; May.

Q Okay.

A Kathy was there. She'll know the -- she'll know the date.

Q Okay.

A Sheldon was there, he'll know the date.

Q But as it works out, the antidegradation review you did didn't make any effort to figure out what the additional chemicals, if there are any additional

chemicals, would be or what their concentrations would be?

A Well, and again, that falls into the court of the permit writer, and I assumed that the permit writer would have -- you know, that there would be limits established related to the technology of the discharge, you know, the nature of the discharge.

Q Well, even if that had been true, how did you go about using -- what use did you make of that information about what the content of the discharge was, what the components of the discharge were?

A Okay. Here is your answer: I assumed that the filtrate -- I thought of it as being more of a solid that would be captured, you know, like -- even if it's in liquid form to begin with from backwashing or what have you, you can do different coagulation-type steps to then collect it as a solid onto a filter or what have you, and then it would go to the landfill.

I really did not in my brain -- my little tiny brain think about that some of that elutriate would be discharged in the effluent. I really just thought it would be mostly the hypersaline?

MR. FREDERICK: Okay. All right. Fair enough. Good. It's been not that long an afternoon, but a little bit of a long afternoon. I don't have any

further questions. Thank you.

THE WITNESS: You're welcome.

EXAMINATION

BY MR. WOTRING:

Q Dr. Wallace, my name is Earnest Wotring, and I represent the Port, and I just have a very few questions.

A Okay.

Q I just want to focus on the last exhibit, Exhibit 6. And do you have that in front of you on the screen?

A Mr. Frederick is still sharing his screen.

Q He is. I appreciate it.

MR. FREDERICK: Would you like me to unshare mine, Earnest?

MR. WOTRING: Oh, no. If you can move it back up, that would save us a little bit of time, and I appreciate your -- your helping me out, too, for part of that.

MR. FREDERICK: Okay.

Q (BY MR. WOTRING) So my first question is: That Texas Water Development Board study --

A Study, uh-huh.

Q -- that's referenced there in that second sentence, did you have that in front of you when you did

Q The Corpus Christi system that you were looking at is a very health -- fairly healthy system and dynamic?

A Exceptional aquatic life use. That's as healthy as we get in our standards.

Q And I want to -- I want to talk to you just for a minute -- and I don't have a lot -- but I want to talk to you just for a minute about the factors that went into your analysis on the antidegradation review. Some people might raise a question about it, and I -- I want to make sure we have from you your -- your factors that went into it.

And, of course, one factor that we haven't talked about is the fact that you have a Ph.D. Isn't that right?

A Correct.

Q And I'm sorry. I seem to have misplaced your resume, although it's within inches of my hands right now. Would you mind telling us what your Ph.D. is in?

A It's in biology, and it's in the aquatic resources program from Texas State University. So at that point, I had switched back to freshwater. I basically have three degrees in biology, and I studied freshwater and the biology -- I mean, a Bachelor's degree. Marine -- for my Master's in marine afterward,

I had several research positions afterward and then started becoming fascinated by water resources and ended up at this program at Texas State.

And that's what I really wanted to study was water resources, but then they were low on funding, then they said, yeah, you grad students have to get funding. And so I just -- by, again, one of those divine interventions ended up with this plankton study that I did, and it was one of those things where I said, well, I know plankton. I know I can get myself through this Ph.D. now. So then I studied freshwater plankton, and essentially what's so neat about it all is that all the knowledge I learned in the marine environment convey.

Q Well, and that makes a point. But when you talk about your evaluation based upon your -- about the antidegradation review, you're basing that on your education and getting a Ph.D. in marine biology and your work for the TCEQ over these years, aren't you?

A Well, there's also many years of research that I did in the freshwater reservoir system of the Highland Lakes, several reservoirs, several years, almost 500 experiments on plankton. And that -- that system is a mesotrophic system, which again, when I went back to my empirical enumeration of the plankton in the ship

channel as being from medium to chocked full of plankton, mesotrophic would be in the middle, the medium. So I studied that quite a lot in these reservoirs, which are interestingly very similar to estuaries in their shape. You know, I talked about the pie shape, the wedge shape. Well, that's how reservoirs are shaped. And so there's a lot of plankton dynamics that are similar in reservoirs versus estuaries.

So when I got this review, I was all over it. I really, you know, at the end of the day wished I could do more as a reviewer in the -- yeah.

Q But, I mean, you were basing your analysis upon your education and your body of knowledge, in part. Correct? In part, you were basing it upon that?

A Oh, absolutely. I think we all bring that to the table every day.

Q In addition, you're bringing to the table the fact that you got other information about what was going on, and your baseline knowledge about plankton and all of that went into your antidegradation review. Is that correct?

MR. FREDERICK: I'm afraid I have to object as to form on this one, Mr. Wotring.

MR. WOTRING: That's fine.

Q (BY MR. WOTRING) You can go ahead and answer.

Is that a fair statement, Dr. Wallace? Would you need me to repeat it?

A No; that's a fair statement. I would answer correct. I apologize for going on and on about it.

Q You don't need to apologize for anything. A lawyer has got to do what a lawyer has got to do. He's got a job to do, I've got a job to do, you're doing your job, and we're going to -- you know, we've got a little bit more to do.

And so I want to go back to the basis for your antidegradation review. So you expected there to be a well -- the effluent at the edge of the mixing zone to be well mixed with the ambient seawater in the channel given your -- your knowledge and base of information about the ship channel and how water flows in that area. Is that also a fair statement?

A Correct. And -- but it also did hinge on -- you know, I did feel better -- going back to feeling -- about there being a diffuser.

Q So you also understood, in part -- part of the basis for your opinion is the fact there was a diffuser being used to -- to disperse the effluent when it was coming out of the facility. Is that right?

A Correct.

Q In Comment 84, it also says, "Given the width

of the channel, tidal currents, and the enhanced mixing provided by the diffuser, the change in salinity above that of ambient seawater is anticipated to be minimal."

Now, are all those factors that went into your antidegradation review?

A Absolutely.

Q And it then says, "the Executive Director determined that there is adequate zone of passage for larval and adult life stages."

And is that a comment or a portion of a comment that you would have had input into?

A Correct.

Q And do you agree with that statement as you sit here today at your deposition?

A I do.

Q And the final sentence there, "Therefore, negative impacts to native species and migration patterns of larval and adult life stages are not anticipated."

Do you -- do you agree with that statement?

A I do.

Q And, again, that statement in your antidegradation review is based upon the factors that we talked about at your deposition today and your

experience and training and your education in obtaining a Ph.D. in marine biology. Is that all true?

A With a Master's in marine science and a Ph.D. in aquatic science.

Q Well, okay. So your -- your opinion about the antidegradation review is based upon the factors we talked about earlier today and your education and your advanced degree. Is that all -- all a fair statement?

A Correct.

Q Now, you talked a little bit -- and this is my final -- never say "final question" because you know how we are.

My final topic is you talked a little bit with Mr. Frederick about de minimis and de minimis effects on the body of water where the effluent is going. I don't want to go back there. I just simply want to know if we expect that the effluent is going to be 1.34 percent at the edge of the mixing zone, is that a de minimis effect on the aquatic life for everything at the edge of the mixing zone and there and beyond?

A It should be. That's sort of the basis of the -- of the whole picture. Now, in the real world does it really work like that, Mr. Wotring? Can I go out with a probe and always hit that 1.3 percent?

Q Well, if that's what the model says, that's the

best data that we have. Correct?

A It is the best data we have. And we're also assuming that the -- the desal plant will always be running perfectly, aren't we?

Q Well, I don't know that we are assuming that because that was part of something else you mentioned, which is that the permit writer writes into the permit testing and other requirements so that we -- we don't have to assume, we have to verify. Isn't that --

MR. FREDERICK: Objection, form.

Q (BY MR. WOTRING) Is that correct?

A Well, that's -- that's a good point that you made because essentially, hopefully through the monitoring requirements of this permit, we will pick up excursions. That's what you would call that when the plant is not running optimately -- optimally. It will have excursions of the permit. In this case, we don't have limits, we're just monitoring, but we will see those spikes --

Q And --

A -- and then from there hopefully we'll be able to constrain what we then allow to be discharged, constrained numerically. So you use the data that they do through the monitoring to then get your upper and lower bounds.

MR. WOTRING: Okay. Dr. Wallace, I appreciate your time. That's all the questions I have.

MS. HUMPHREYS: (Zoom audio distortion)

THE REPORTER: Ms. Humphreys, this is the court reporter. I didn't hear what you said.

MS. HUMPHREYS: I do not have any questions.

THE REPORTER: Thank you.

MR. SHELDON: OPIC, we'll reserve our questions until the time of hearing.

MR. FREDERICK: And I have one redirect or one re -- yeah, I guess redirect.

FURTHER EXAMINATION

BY MR. FREDERICK:

Q Dr. Wallace, in response to a question from Mr. Wotring, you distinguish between marine science -- a degree in marine science and a degree in aquatic science. Was I correct about that?

A Correct, sir.

Q And for us laypeople, would aquatic science be like freshwater phenomena and marine science would be saline ocean/bay/Gulf kind of phenomenon?

A Correct. And oceanography as well, which would be the deep ocean.

MR. FREDERICK: Okay. Great. Thank you.